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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,064	10/13/2000	David B. Miller	10001197-1	1275

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EXAMINER

TRAN, MINH LOAN

ART UNIT PAPER NUMBER

2826

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/688,064

Applicant(s)

MILLER ET AL.

Examiner

Minhloan T. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-13 and 21-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-13 and 21-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Applicant's communication filed on 02/11/2003 has been carefully considered by the examiner. The arguments advanced therein are persuasive with respect to the rejections of record and those rejections are accordingly withdrawn. In view of a further search, however, a new rejection is set forth further below. This action is not made final.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Jewell et al. (6,243,508).

Jewell et al. discloses an optoelectronic device comprising an optical lens system comprising a lens substrate 12 supporting one or more optical lenses 24 and a semiconductor (silicon) spacer substrate 132 defining one or more apertures 133 therethrough; an optical device systems comprising a device substrate supporting one or more optical devices 26'; wherein the lens substrate 12 is bonded to the silicon spacer substrate 132 and the silicon spacer substrate 132 is bonded to the device substrate supporting one or more optical devices 26', with the one or more optical

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lenses 24, the one or more optical devices 26' held together in registered alignment.

Note figure 17 of Jewell et al.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-12, 21-24, 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jewell et al. (6,243,508).

With regard to claims 3-7, 9-11, 21, 22, 28, 29, figure 17 of Jewell et al. discloses an optoelectronic device comprising an optical device system comprising an optical device substrate supporting one or more optical devices 26'; an optical lens system 12 comprising one or more optical lens 24 and a silicon spacer substrate 132 having a device bonding surface and having an integrated circuit for driving the optical device 26' (see lines 3-19 in column 15 of Jewell et al.), wherein the one or more optical lenses 24 are recessed below the device bonding surface of the silicon spacer substrate 132 and incorporated in the optical lens system 12; a plurality of solder bumps 148 disposed between the optical device substrate supporting one or more optical devices 26' and the device bonding surface of the optical lens system 12; wherein the plurality of solder bumps 148 bond the optical device substrate supporting one or more optical devices 26' to the device bonding surface with the one or more optical devices 26' aligned with the one or more optical lens 24, and a characteristic dimension of the plurality of solder

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bumps 148 is selected based upon a representative focal distance between the one or more optical devices 26' and the one or more optical lens 24. Note figures 16, 17 and columns 14, 15 of Jewell et al.

Jewell et al. does not disclose the metallization patterns of the optical device system and the optical lens system. However, it would have been obvious to one of ordinary skill in the art to form the optoelectronic device of Jewell et al. having the metallization patterns of the optical device system and the optical lens system, because such structure is conventional in the art for bonding the solder bump to the optical device substrate or to the optical lens substrate.

With regard to claims 5, 6, 10, Jewell et al. does not disclose the optical substrate 12 is bonded to the spacer substrate 132 by a wafer bonding process or a flip-chip solder bonding process. However, Applicant's claims 5, 6, 10 do not distinguish over the Jewell et al. reference regardless of the process used to bond the substrates together, because only the final product is relevant, not the process of making such as wafer bonding process or flip-chip solder bonding process.

Note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and In re Marosi et al., 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious

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product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear. See also MPEP 706.03(e).

With regard to claims 8, 23, 24, 26, 27, figure 17 of Jewell et al. does not show multiples optical lenses are cooperatively arranged in optical alignment with multiple respective optical devices. However, figure 16 of Jewell et al. show multiples optical lenses 24 are cooperatively arranged in optical alignment with multiple respective optical devices 26, 26' through multiple respective spacer substrate apertures 133. Note lines 57-67 in column 14 and lines 1, 2 in column 15 of Jewell et al. It would have been obvious to one of ordinary skill in the art to form the device of figure 17 having multiples optical lenses are cooperatively arranged in optical alignment with multiple respective optical devices through multiple respective spacer substrate apertures in order to form a compact device.

With regard to claim 12, figures 16, 17 of Jewell et al. does not disclose the optical devices comprise a vertical cavity surface emitting laser. However, although Jewell et al.'s device does not teach exact the type of the optical devices as that claimed by Applicant, the type differences are considered obvious design choices and are not patentable unless unobvious or unexpected results are obtained from these changes. It appears that these changes produce no functional differences and therefore would have been obvious. Note *In re Leshin*, 125 USPQ 416.

With regard to claim 30, figure 17 of Jewell et al. does not disclose the device substrate is a semiconductor substrate. However, it would have been obvious to one of

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ordinary skill in the art to form the device substrate is a semiconductor substrate because such structure is conventional in the art for integrating a plurality of semiconductor elements in the same substrate.


Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minhloan T. Tran whose telephone number is (703) 308-4919. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mlt
05/2003


Minhloan T. Tran
Primary Examiner
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